

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions of claims in the application:

Listing of Claims:

1-41. (Canceled)

42. (New): A security paper comprising at least two fibrous paper plies, wherein each of said plies is a material layer having a fibrous structure comprising fibers,

the first ply being an external ply that includes a first authentication element provided within a region of non-zero thickness of the first ply, said first authentication element comprising at least one of (i) authentication particles, and (ii) authentication fibers different from the fibers of the fibrous structure of the first ply, and

the other ply, the second ply, comprising a second authentication element provided within an area of non-zero thickness of the second ply, said second authentication element comprising at least one of (i) authentication particles, and (ii) authentication fibers different from the fibers of the fibrous structure of the second ply,

wherein each of said first and second authentication elements is selected from the group consisting of iridescent particles, luminescent fibers, luminescent particles, fluorescent fibers, fluorescent particles, phosphorescent fibers, phosphorescent particles, colored fibers, colored planchettes, thermochromic fibers, thermochromic particles, fibers that react to electromagnetic fields, particles that react to electromagnetic fields, and mixtures thereof,

wherein the first authentication element is of a first type and the second authentication element is of a second type different from the first type,

and wherein (1) the first ply does not include any authentication element of the second type, and (2) the second ply does not include any authentication element of the first type.

43. (Previously presented): The security paper as claimed in claim 42, wherein the second authentication element of the second ply can be detected optically.

44. (New): The security paper as claimed in claim 42, wherein said second ply comprises a reinforcing element, and said reinforcing element also has an authentication function.

45. (New): The security paper as claimed in claim 44, wherein said reinforcing element constitutes said second authentication element of said second ply.

46. (New): The security paper as claimed in claim 42, wherein the fibers of the fiber structures of the plies are cotton fibers.

47. (New): The security paper as claimed in claim 42, which comprises a third ply having a reinforcing element, wherein the third ply is central and the second ply is another external ply.

48. (New): The security paper as claimed in claim 42, which is a banknote paper.

49. (New): The security paper as claimed in claim 42, wherein said plies have been assembled wet.

50. (New): A process for manufacturing a security paper as claimed in claim 42, comprising assembling said plies wet.

51. (New): The security paper as claimed in claim 42, wherein at least one of said first and second authentication element is chosen from substances that react to electromagnetic fields of the microwave type.

52. (New): The security paper as claimed in claim 42, wherein at least one of the first and second authentication elements comprises flakes.

53. (New): A security paper comprising at least two fibrous paper plies, wherein each of said plies is a material layer having a fibrous structure comprising fibers,

the first ply being an external ply that includes a first authentication element provided within a region of non-zero thickness of the first ply, said first authentication element being a watermark, and

the other ply, the second ply, comprising a reinforcing element, said reinforcing element being fibers different from the fibers of the fibrous structure of the second ply, said reinforcing element being selected from the group consisting of synthetic fibers, natural textile fibers, and mixtures thereof,

wherein the reinforcing element is such that the paper has a mechanical strength higher than a mechanical strength of a paper having identical weight in g/m^2 and identical composition except without the reinforcing element,

and wherein (1) the first ply does not include any reinforcing fibers different from the fibers of the fibrous structure of the first ply and such that the paper would have a mechanical strength higher than a mechanical strength of a paper having identical weight in g/m^2 and identical composition except without the reinforcing element, and (2) the second ply does not include any watermark.

54. (New): The security paper as claimed in claim 53, wherein the reinforcing element is chosen from polyester fibers, polyamide fibers, abaca, hemp, flax, Chinook fibers, and mixtures thereof.

55. (New): The security paper as claimed in claim 53, wherein the reinforcing element is chosen from polyester fibers, said polyester fibers are polyethylene terephthalate fibers, and said polyester fibers are present in an amount of between 10 and 20 parts by dry weight per 100 parts of the other fibers of said second ply.

56. (New): The security paper as claimed in claim 53, wherein the second ply comprises a second authentication element.

57. (New) The security paper as claimed in claim 56, wherein said second authentication element is selected from the group consisting of iridescent particles, luminescent fibers, luminescent particles, fluorescent fibers, fluorescent particles, phosphorescent fibers, phosphorescent particles, colored fibers, colored particles, thermochromic fibers, thermochromic particles, fibers that react to electromagnetic fields, particles that react to electromagnetic fields, and mixtures thereof.

58. (New): The security paper as claimed in claim 53, wherein said external first ply has a thickness substantially greater than that of said second ply.

59. (New): The security paper as claimed in claim 53, wherein said reinforcing element also has an authentication function.

60. (New): The security paper as claimed in claim 53, wherein said security paper has a tear index of 10 mN.m²/g or higher.

61. (New): The security paper as claimed in claim 53, wherein the fibers of the fiber structures of the plies are cotton fibers.

62. (New): The security paper as claimed in claim 53, which comprises a third ply having an authentication element, wherein the second ply is central and the third ply is another external ply.

63. (New): The security paper as claimed in claim 53, which is a banknote paper.

64. (New): The security paper as claimed in claim 53, wherein said plies have been assembled wet.

65. (New): The security paper as claimed in claim 53, wherein said external first ply including the watermark has been formed on a cylinder-mold machine that includes a watermark wire.

66. (New): A process for manufacturing a security paper as claimed in claim 53, comprising assembling said plies wet.

67. (New): The process for manufacturing a security paper as claimed in claim 66, wherein said external first ply including the watermark is formed on a cylinder-mold machine that includes a watermark wire.

68. (New): The security paper as claimed in claim 42, wherein each of said first and second authentication elements is selected from the group consisting of iridescent particles, luminescent fibers, luminescent planchettes, fluorescent fibers, fluorescent planchettes, phosphorescent fibers, phosphorescent planchettes, colored fibers, colored planchettes, thermochromic fibers, thermochromic planchettes, fibers that react to electromagnetic fields, planchettes that react to electromagnetic fields, and mixtures thereof.

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69. (New): The security paper as claimed in claim 42, wherein each of said first and second authentication elements is selected from the group consisting of iridescent particles, luminescent fibers, luminescent particles, fluorescent fibers, fluorescent particles, phosphorescent fibers, phosphorescent particles, colored fibers, thermochromic fibers, thermochromic particles, fibers that react to electromagnetic fields, particles that react to electromagnetic fields, and mixtures thereof.